User's Manual

A2

SD-210L

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WACOM

USER'S MANUAL: A2
April 1, 1992 - Version 1.1

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FCC Notice

Warning. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equiptment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the radio or television receiving antenna.
- Move the equipment further from the receiver.
- Connect the equipment to an outlet on a different circuit from the receiver.

This device requires a shielded AC power supply cable. This device requires a shielded I/O cable to connect it to a computer or peripheral device.

If necessary, the user should consult the dealer or an experienced radio/television technician for help. The user may find the following booklet prepared by FCC helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the US Government Printing Office, Washington D.C., 20402, Stock No. 004-000-00345-4.

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CSA Notice

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

ZZF Notice

Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß die

Digitalisiertabletts, SD-210L
(Gerät, Typ, Bezelchnung)

in Übereinstimmung mit den Bestimmungen der Post-Verfügung Nr. 1046/1984 (Amtsblattverfügung) funkentstört sind.

Der Deutschen Bundespost wurde das Inverkehrbringen dieser Geräte angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

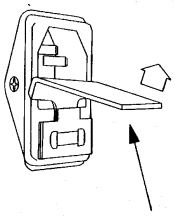
_____

Name des Herstellers, WACOM Co., Ltd.

⚠ CAUTION

To prevent fires or electric shock, always replace fuses with fuses of the same type and rating.

Figure 4-A
Fuse Holder



The digitizer fuse for your digitizer (A2 size tablet) is a 5 x 20 mm, 250V, 315mA, Littelfuse® type # 218.315. A replacement fuse is provided with the digitizer inside the fuse holder (located in the rear of the tablet below AC-IN).

To replace the digitizer fuse:

1. Remove the power cable from the AC-IN connector.
2. Locate the fuse holder under the black plastic cover below the AC IN connection. Pop the cover open using the fuse extraction tool that comes with the digitizer (shown in Figure 4-A), a screwdriver or other tool.

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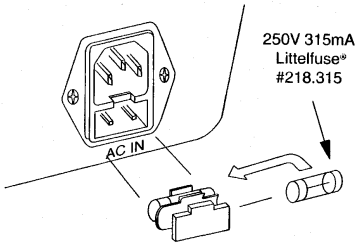
Figure 4-B
Fuse Replacement



3. There are two fuses — the active fuse, further inside, and the spare, closer to the outside of the tablet. Remove the active fuse from its holder and replace it with the spare (Figure 4-B).

4. Order a replacement fuse.

If the fuse blows again contact your WACOM representative to have your digitizer repaired.

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About the Manuals

This manual presents information on digitizers in general and on the WACOM SD-Series in particular with sections on definitions, principles of operation, maintenance, and DIP switch settings.

- For PC installation procedures, see *PC Installation and Utilities.*
- For Macintosh® installation procedures, see *Macintosh Installation and Operation.*
- For programming information, send for the *WACOM Programmer's Manual.*

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The WACOM Advantage

Congratulations on choosing the WACOM (pronounced **walk´**-come) advantage and welcome to the world of cordless digitizing.

The unique WACOM technology provides a set of selection and drawing tools ergonomically designed to be natural extensions of the hand. *Cordless*, they free the designer from the interruption of snarled cords. *Ultra-light*, they use no batteries and no magnets.

Users can choose from a variety of pointing devices including a four-button cursor, a standard stylus, and the first cordless, battery-free *pressure* stylus providing the user with a new dimension of input capability.

The WACOM technology has also developed a tablet surface that allows the stylus-to-tablet "feel" to simulate a pen-to-paper feel. Thus the drawing tools, selection devices, and tablet provide a more natural and comfortable man-machine interface.

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Software

To facilitate installation and use, the WACOM digitizer comes with drivers and utilities with helpful hints to allow the tablet to be used with most applications.

Manuals

There are four manuals:

- The *User's Manual* provides information on digitizer components, maintenance, troubleshooting, principles of operation, and DIP switches.
- *PC Installation and Utilities* provides information on drivers and utilities included with the digitizer, and information on using the digitizer in different PC application environments.
- *Macintosh Driver Installation and Operation* extends the WACOM technology to the Macintosh family.
- The *WACOM Programmer's Manual* (available on request) provides software developers the ability to control the flow and format of data programmatically.

Upgrades

As new features, accessories, and software are developed, registered users will be notified about upgrade procedures.

Support

WACOM provides telephone support. (See "Troubleshooting.")

Warranty

Warranty information and the license agreement are included in this package.

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2

The Basics

A digitizer is an electronic device that transmits coordinate data to software running on a host computer. Like those shown in Figure 2-A, digitizer components typically include a flat drawing surface called a "tablet," a selection tool called a "cursor" and a drawing tool called a "stylus," The cursor and stylus are referred to generally as "pointing devices."

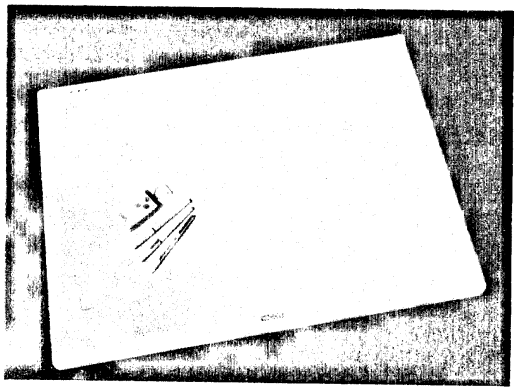

Figure 2-A
Digitizer Components

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Digitizer size is expressed in terms of *effective area*, also referred to as the *active* or *sensing* area. The effective area is the location on or near the tablet (within about 7 mm) that can detect the presence of the pointing device. The different size WACOM tablets are shown in Figure 2-B.

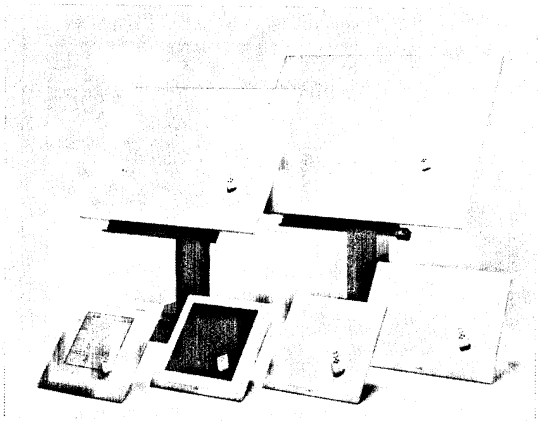

Figure 2-B
The WACOM Family of Tablets

Host Computer

The WACOM Super Digitizers (SD-Series) come with an interface cable, drivers, and utilities for IBM PC compatibles or Macintosh computers. Cables, drivers, or support for many Unix workstations and other computers are available on request.

(WACOM Super Digitizers must be connected to their host computer with a WACOM cable. Other computer cables will not work properly.)

The Tablet

The switches and connections in the back of the tablet are shown in Figure 2-C(a) and (b).

For other tablet specifications, see Appendix B.

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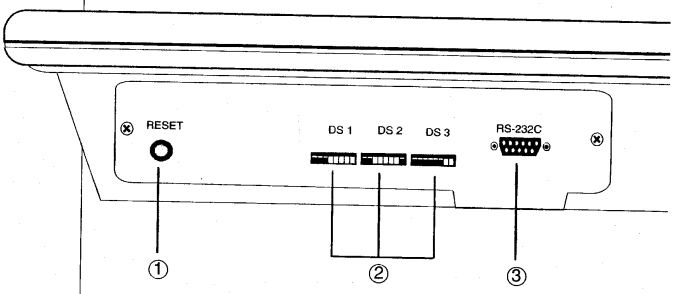
Figure 2-C(a)
Tablet Rear View (left side)

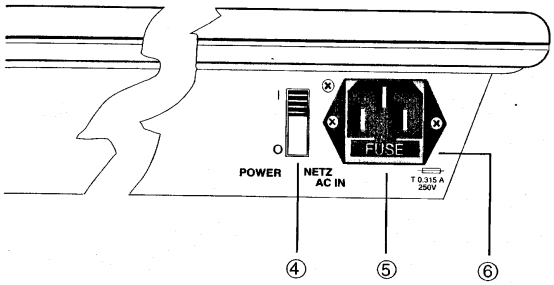


① RESET Force the tablet to reset itself to the DIP switch settings

② DS 1, 2, 3
DIP Switch Banks 1, 2, and 3

③ RS-232C Connection for the interface cable that connects the tablet with the computer

Figure 2-C(b)
Tablet Rear View (right side)



④ POWER ON / OFF switch

⑤ AC IN Recepticle for the AC power cable

⑥ FUSE HOLDER
Holds the active fuse and a spare, fuse is located below the AC IN plug.

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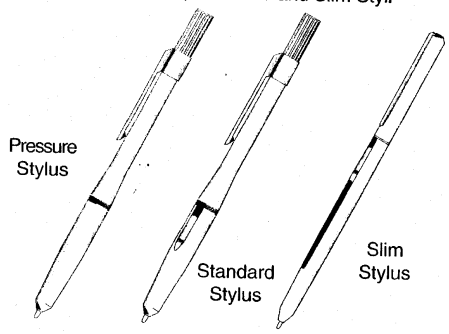
Figure 2-E
Pressure, Standard and Slim Styli



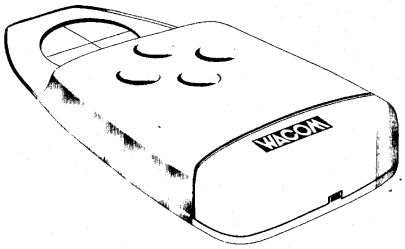
The WACOM pointing devices are shown in Figures 2-E and 2F. For specifications, see Appendix B.

The *pressure stylus* has a pressure-sensing tip and a detachable clip. Model SP-300 has a firmer feel (0-500 grams pressure) and can be identified by a blue band. Model SP-310 has a softer feel (0-300 grams pressure) and can be identified by a red band.

The *standard stylus* is a pen-like tool with a tip switch, a side or barrel switch, and a detachable clip and is available in two models. The SP-200, with a gray band, is a *nonstroke* stylus meaning there is a minimum amount of travel needed to close the tip switch. The SP-210, with a red barrel switch, is a *stroke* stylus meaning there is more travel needed to close the tip switch. The tip is available in plastic for drawing directly on the tablet or in pen-like color refills typically used for tracing.

The *slim stylus* is a slim type stylus with the same functions as the *standard stylus*, and is available in two models: the SP-200A with a gray clip, the SP-210A with a magenta clip.

Figure 2-F
Four-Button Cursor



The four-button *cursor* is a mouse-like tool with a pair of crossed hairs used for making precise selections. An eyelet is located at one end for attaching a safety cord.

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Like a Mouse

Like a mouse, a pointing device provides input to a host computer.

Unlike a Mouse

Unlike a mouse, a cursor or stylus provides precise selection or drawing capabilities. A stylus, in particular, is a natural drawing device, like a pencil, and is therefore an ideal design tool for engineers, architects, graphic artists, and desktop publishers.

Unlike a mouse, a digitizer can have a single absolute origin. The advantage from an applications standpoint is that the user can define an area on the tablet, as a menu, for example. There is a direct correspondence between the distances on the tablet and distances on the computer screen. A mouse, on the other hand, creates a new origin with every touchdown.

Also, mouse distances are affected by surface type and foreign matter. When a mouse is overdue for a cleaning, the correspondence between mouse movement and screen pointer movement may vary.

A mouse may also limit your natural drawing capabilities. Have you ever tried to sign your name with a mouse?

DIP Switches

The digitizer operates according to a set of parameters that the user can define through DIP[1] switches. The digitizer reads the switches whenever the user turns the tablet on or presses the RESET button. For the location of switches and buttons, see "The Tablet" in this section.

To change a DIP switch setting, use a small tool (such as a tiny screwdriver or ballpoint pen) to flip the switch. Do not use a pencil as the graphite can collect under the switch.

The command set you select (using the appropriate DIP switches) affects the meaning of the remaining DIP switches. Be sure to use the correct DIP switch chart for the command set you are using. For DIP switch defaults, definitions, and options, refer to Appendix A.

Programs may alter the effects of DIP switch settings. Your software may set the tablet in a mode not set in the DIP switches.

[1] "DIP" is an acronym for "Dual-In-line Package" — a type of switch housing that originated with integrated circuits.

It is a good practice to only change DIP switch settings with the power OFF since the digitizer will read the new settings when power goes ON.

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Principles of Operation

With WACOM's patented technology, the digitizer alternates continuously between transmit and receive mode (changing modes about every 20 microseconds). Refer to Figure 3-A. In transmit mode, the tablet sends a signal at a particular frequency, producing electromagnetic resonance in the pointing device. The pointing device stores the electromagnetic energy using a coil-and-capacitor resonant circuit.

When the tablet goes into receive mode, the pointing device re-emits a signal at a different frequency which carries switch and pressure data to the tablet. The tablet computes the coordinates based on signal strength across several grid wires under the tablet surface. The tablet then translates the data to millimeters or inches, ASCII or binary,[1] and sends the data through the serial port to the host.

Because there is no power source in the pointing devices, calibration and tuning are unnecessary.

[1] Depending on DIP switch settings or programmer instructions

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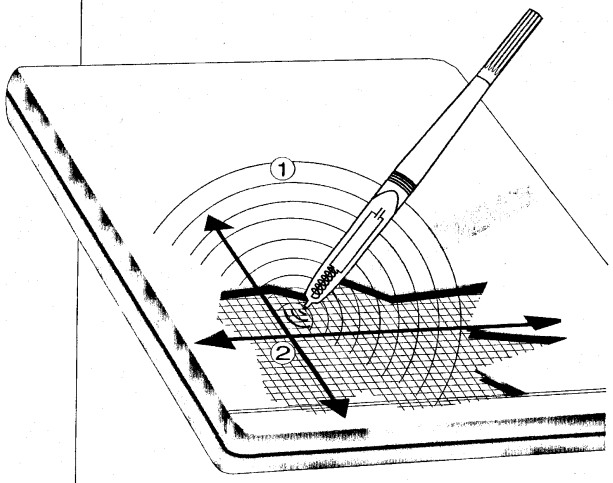
Figure 3-A
The WACOM Technology



① TRANSMIT MODE — The tablet sends a signal at frequency A, producing electromagnetic resonance in the pointing device.

② RECEIVE MODE — The pointing device reemits a signal at frequency B.

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Maintenance

Regular cleaning of the digitizer will help prolong its life and requires careful attention. To clean the digitizer, follow these steps:

1. Set the tablet's power switch to OFF.
2. Unplug the power cable from the back of the digitizer.
3. Dilute a neutral detergent solution, such as dishwashing liquid, in a bowl of lukewarm water.
4. Use a soft cotton, lint-free cloth to clean the tablet surface, cursor, and stylus.

> Do not clean the digitizer with any volatile liquid like paint thinner, turpentine, or benzene. Such solvents may damage plastics used in the digitizer.

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Cautions

Use proper care when working with or storing digitizer components:

- Avoid extreme heat and cold. Do not store components outdoors.
- Do not allow the components to stay in the direct rays of the sun.
- Do not allow any fluids to come into contact with the components, except when cleaning.
- Keep the tablet surface free of dust.
- Do not drop or hit the tablet, cursor, or stylus.
- Do not use any volatile liquid, like paint thinner, turpentine, or benzene. They may damage plastics used in the tablet.

Obtaining Refills

Pressure, standard and slim stylus refills are made from Duracon, especially for WACOM. Contact your WACOM representative for replacements.

Color refills are available from your local WACOM representative.

> Standard and color stylus refills will not work properly in pressure styli.

To find your WACOM representative contact:

WACOM Computer Systems GmbH
Neuss, Germany

WACOM Technology Corp
Vancouver WA, U.S.A.

WACOM Co. Ltd
Tokyo, Japan

Addresses and telephone numbers are in the front of this manual.

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Replacing Refills

Be sure that you have the correct refill for your stylus. Pressure styli will only work with pressure refills. Standard styli use standard or color refills. Slim styli use smaller size refills.

Pressure and slim stylus refills are entirely white.

Standard stylus refills have white tips and brass shafts.

Color stylus refills look like ball point pen refills, and are stain less steel.

To replace the refill, follow these steps:

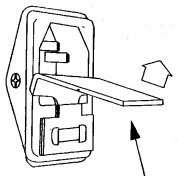
1. Using a tool such as a small pliers or strong tweezer, pull the old refill straight out of the stylus.
2. Insert the new refill straight into the space where the old refill had been.
3. Check to make sure the new tip is firmly in place by holding the stylus vertically and placing firm pressure on the tip.

Do not attempt to unscrew your stylus!
It is all one piece. Attempting to seperate it into two pieces will break your stylus.

⚠ CAUTION
To prevent fires or electric shock, always replace fuses with fuses of the same type and rating.

Fuses

Figure 4-A
Fuse Holder



Fuse Extraction Tool

The digitizer fuse for your digitizer (A2 size tablet) is a 5 x 20 mm, 250V, 315mA, Littelfuse® type # 218.315. A replacement fuse is provided with the digitizer inside the fuse holder (located in the rear of the tablet below AC-IN).

To replace the digitizer fuse:

1. Remove the power cable from the AC-IN connector.
2. Locate the fuse holder under the black plastic cover below the AC IN connection. Pop the cover open using the fuse extraction tool that comes with the digitizer (shown in Figure 4-A), a screwdriver or other tool.

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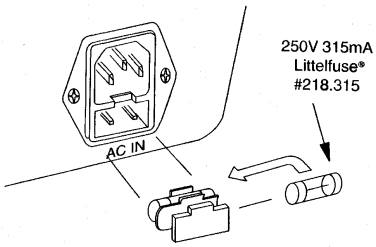
Figure 4-B
Fuse Replacement



3. There are two fuses — the active fuse, further inside, and the spare, closer to the outside of the tablet. Remove the active fuse from its holder and replace it with the spare (Figure 4-B).

4. Order a replacement fuse.

If the fuse blows again contact your WACOM representative to have your digitizer repaired.

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Troubleshooting

1. If your digitizer is not working at all:
   - Is the power cable connected?
   - Is the power switch turned on?
   - Is the interface cable between the tablet and the computer connected securely?
   - Check the settings on the DIP switches.
2. If the POWER indicator is off, but the digitizer has power, try replacing the fuse. For instructions, see "Maintenance." If the fuse blows again, contact your WACOM sales representative.
3. To see if there is a problem with the power cable, attach the cable to a component you know to be operational. (The WACOM power cable will work with most office machines and computers.)

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4. If the host computer is not receiving signals, make sure there is only one pointing device in the effective area at one time.

5. If you are receiving unusual coordinate data, check to make sure you are using the pointing device in the right modes.

   Standard and Slim Styli – Use nonpressure mode only

   Pressure Stylus – Use pressure mode only

   Switches and color bands are used to identify the different types of styli. See Appendix B.

   Operation mode is selected through DIP switch settings. See Appendix A.

   Procedures to select pressure or nonpressure modes:

   - Macintosh: Use the Control Panel. See "Macintosh Installation and Operation."
   - IBM PC: Use a program. See "PC Installation and Utilities Manual."

> The pressure stylus *cannot* be used with MM 1201, or Bit Pad Two emulations since these command sets do not support the pressure feature.

6. To talk with a WACOM technician:

   Germany
   49-2131-166001

   USA
   206-750-8884

   Japan
   81-3-3985-0097

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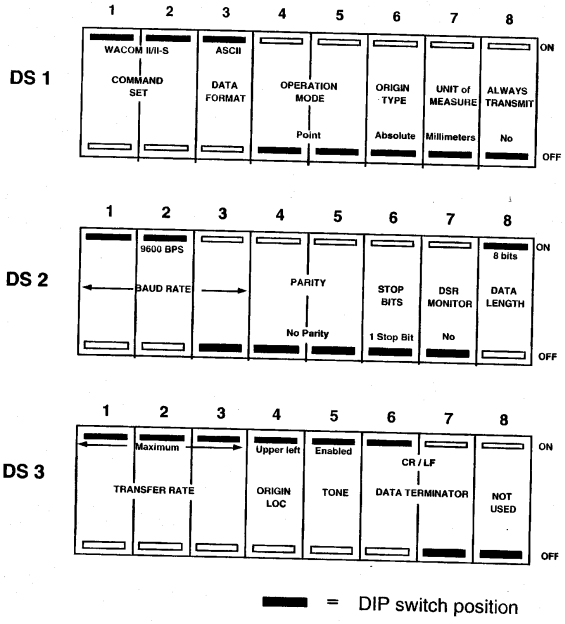
WACOM II (Factory) DIP Switch Defaults



■ = DIP switch position

WACOM II DIP Switch Options

DS 1

	1	2
COMMAND SET		
WACOM II	ON	ON
DATA FORMAT		3
Binary		OFF
ASCII		ON
OPERATION MODE	4	5
Point	OFF	OFF
Suppressed Switch Stream	OFF	ON
	ON	OFF
Stream	ON	ON
ORIGIN		6
Absolute		OFF
Relative		ON
UNIT OF MEASURE		7
Millimeters		OFF
Inches		ON
ALWAYS TRANSMIT		8
No		OFF
Yes		ON

DS 2

BAUD RATE (bits/sec)	1	2	3
150	OFF	OFF	OFF
300	OFF	OFF	ON
600	OFF	ON	OFF
1200	OFF	ON	ON
2400	ON	OFF	OFF
4800	ON	OFF	ON
9600	ON	ON	OFF
19,200	ON	ON	ON

	4	5
PARITY		
None	OFF	■
Odd	ON	OFF
Even	ON	ON
STOP BITS		6
1		OFF
2		ON
DSR MONITOR		7
No		OFF
Yes		ON
DATA LENGTH		8
7 bits		OFF
8 bits		ON

DS 3

TRANSFER RATE (points / sec)	1	2	3
1	OFF	OFF	OFF
5	OFF	OFF	ON
10	OFF	ON	OFF
20	OFF	ON	ON
50	ON	OFF	OFF
67	ON	OFF	ON
100	ON	ON	OFF
MAX	ON	ON	ON

	4
ORIGIN LOCATION	
Lower left	OFF
Upper left	ON

	5
TONE	
Disabled	OFF
Enabled	ON

	6	7
DATA TERMINATOR		
CR	OFF	OFF
LF	OFF	ON
CR/LF	ON	■

	8
NOT USED	
Mandatory setting	OFF

Factory Setting

■ ON or OFF

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WACOM II DIP Switch Definitions

DS 1 (DIP Switch 1)

1, 2 COMMAND SET	WACOM II
3 DATA FORMAT	ASCII or Binary Format of the data sent from the digitizer to the host
4, 5 OPERATION	Determines the mode in which coordinate data is sent to the digitizer: ■ Point Mode Sends one pair of X,Y coordinates with each switch press of the pointing device ■ Suppressed Mode Sends X,Y coordinates only when a "significant" pointing device event occurs. This event could be a: • Switch press or release • Entering or leaving the effective area • Change in X or Y greater than a specified value ■ Switch Stream Mode Sends X,Y coordinates continuously while a button or stylus switch is pressed ■ Stream Mode Sends X, Y coordinates continuously.

6 ORIGIN TYPE	■ Relative Like a traditional mouse every touchdown creates a new origin. ■ Absolute The origin is fixed at the location selected with the ORIGIN LOCATION DIP switch.
7 UNIT OF MEASURE	Inches or millimeters. Measurement unit of the data coordinates. See "Resolution" under "General Specifications" in Appendix B.
8 ALWAYS TRANSMIT	■ Yes In stream mode, coordinates will be sent continuously when the pointing device is in or out of the effective area. ■ No In stream mode, no data will be sent to the host when the pointing device is out of the effective area. For more details on this parameter, refer to the *WACOM Programmer's Manual*, AL command.

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WACOM II DIP Switch Definitions *(continued)*

DS 2 (DIP Switch 2)

1, 2, 3	BAUD RATE	150 - 19,200 bps Number of bits transmitted per second from the digitizer to the host. Baud rate for the digitizer and host must be the same.
4, 5	PARITY	Parity, a method used to determine if an error occurred in data transmission, can be even, odd, or none. Parity for the digitizer and host must be the same.
6	STOP BITS	Number of stop bits to signal the end of a character. Stop bits for the dig itizer and host must be the same.
7	DSR MONITOR	Determines whether or not the tablet responds to the DSR input signal of the RS-232C serial port.
8	DATA LENGTH	The number of bits in a character. Must be the same for digitizer and host.

DS 3 (DIP Switch 3)

1, 2, 3	TRANSFER RATE	Number of coordinate pairs transmitted per second with related switch or pressure data.
4	ORIGIN LOCATION	If ORIGIN TYPE is "absolute" (DS 1, switch 6), ORIGIN LOCATION determines whether the origin is in the upper or lower left of the tablet.
5	TONE	Activates or disables audio feedback
6, 7	DATA TERMINATOR	A data delimiter — CR/LF, CR, LF. The characters sent to signal the end of an X,Y coordinate pair in ASCII mode data transmission
8	NOT USED	Must be set to OFF (mandatory setting)

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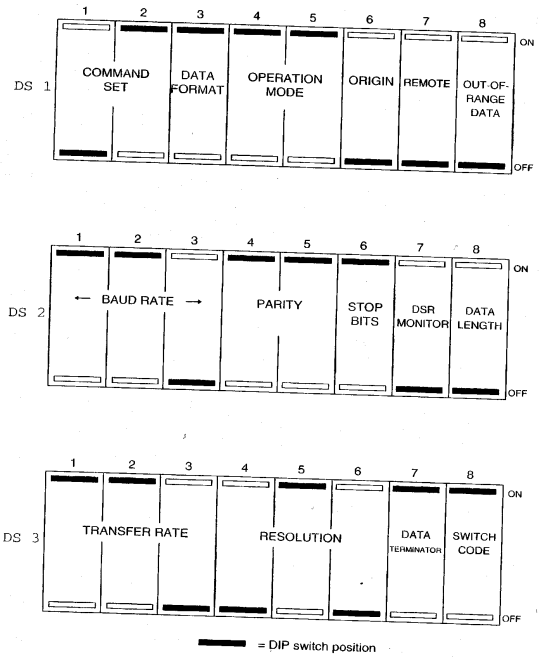
Bit Pad Two
DIP Switch Defaults



Bit Pad Two DIP Switch Options

DS 1

	1	2
COMMAND SET		
BIT PAD II	OFF	ON

	3
DATA FORMAT	
Binary	OFF
ASCII	ON

	4	5
OPERATION MODE		■
Point	OFF	
Switch Stream	ON	OFF
Stream	ON	ON

	6
ORIGIN	
Absolute	OFF
Relative	ON

	7
REMOTE	
Disabled	OFF
Enabled	ON

	8
OUT-OF-RANGE-DATA	
No	OFF
Yes	ON

Factory Setting
■ ON or OFF

DS 2

BAUD RATE (bit/sec)	1	2	3
110	OFF	OFF	OFF
150	OFF	OFF	ON
300	OFF	ON	OFF
1200	OFF	ON	ON
2400	ON	OFF	OFF
4800	ON	OFF	ON
9600	ON	ON	OFF
19,200	ON	ON	ON

PARITY	4	5
None	OFF	■
Odd	ON	OFF
Even	ON	ON

STOP BITS	6
1	OFF
2	ON

DSR MONITOR	7
No	OFF
Yes	ON

DATA LENGTH	8
7 bits	OFF
8 bits	ON

DS 3

TRANSFER RATE (points / sec)	1	2	3
2	OFF	OFF	OFF
4	OFF	OFF	ON
10	OFF	ON	OFF
20	OFF	ON	ON
40	ON	OFF	OFF
67	ON	OFF	ON
100	ON	ON	OFF
MAX	ON	ON	ON

RESOLUTION (lines / inch)	4	5	6
100	OFF	OFF	OFF
127	OFF	OFF	ON
200	OFF	ON	OFF
254	OFF	ON	ON
400	ON	OFF	OFF
500	ON	OFF	ON
508	ON	ON	OFF
508	ON	ON	ON

DATA TERMINATOR	7
CR	OFF
CR/LF	ON

SWITCH CODE	8
OUT B (1,2,3,4)	OFF
OUT A (1,2,4,8)	ON

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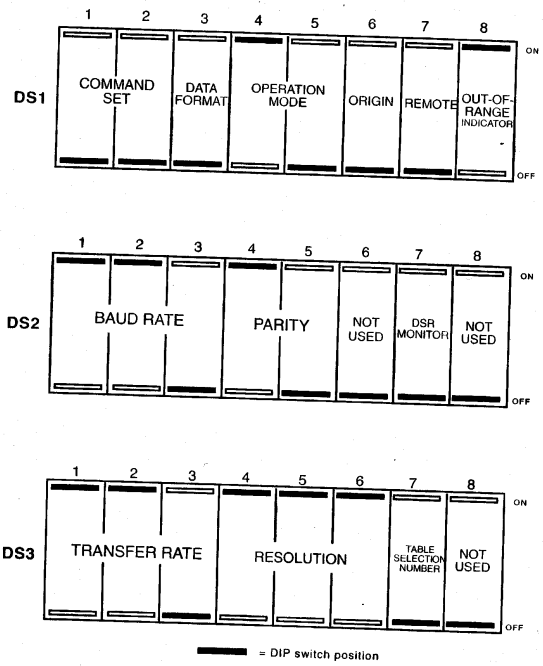
MM 1201
DIP Switch Defaults



MM 1201 DIP Switch Options

DS 1

	1	2
COMMAND SET		
MM 1201	OFF	OFF

	3
DATA FORMAT	
Binary	OFF
ASCII	ON

	4	5
OPERATION MODE		■
Point	OFF	
Switch Stream	ON	OFF
Stream	ON	ON

	6
ORIGIN TYPE	
Absolute	OFF
Relative	ON

	7
REMOTE	
Disabled	OFF
Enabled	ON

	8
OUT-OF-RANGE INDICATOR	
No	OFF
Yes	ON

Factory Setting
■ ON or OFF

DS 2

BAUD RATE (bits / sec.)	1	2	3
150	OFF	OFF	OFF
300	OFF	OFF	ON
600	OFF	ON	OFF
1200	OFF	ON	ON
2400	ON	OFF	OFF
4800	ON	OFF	ON
9600	ON	ON	OFF
19,200	ON	ON	ON

PARITY	4	5
None	OFF	■
Odd	ON	OFF
Even	ON	ON

	6
NOT USED	

DSR MONITOR	7
No	OFF
Yes	ON

	8
NOT USED	

DS 3

TRANSFER RATE (points / sec.)	1	2
2	OFF	OFF
20	OFF	ON
50	ON	OFF
100	ON	ON

RESOLUTION (lines / inch) – all tablets	3	4	5	6
1	OFF	OFF	OFF	OFF
2	OFF	OFF	OFF	ON
4	OFF	OFF	ON	OFF
100	OFF	OFF	ON	ON
200	OFF	ON	OFF	OFF
254	OFF	ON	OFF	ON
400	OFF	ON	ON	OFF
500	OFF	ON	ON	ON
508	ON	OFF	OFF	OFF

ADDITIONAL RESOLUTION (MM 1201, Wacom A2)	3	4	5	6
1000	ON	OFF	OFF	ON
1016	ON	OFF	ON	OFF
1016	ON	OFF	ON	ON
1016	ON	ON	OFF	OFF
1016	ON	ON	OFF	ON
1016	ON	ON	ON	OFF
1016	ON	ON	ON	ON

TABLET SELECTION NUM.	7
0	OFF
1	ON

NOT USED 8

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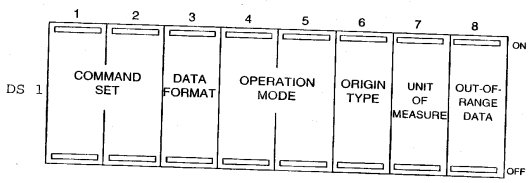
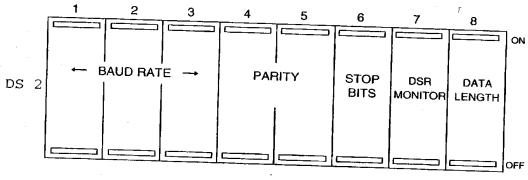
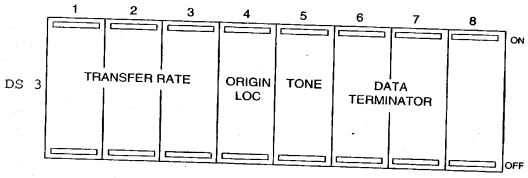
User DIP Switch Settings

Use this page to record your configuration.







= DIP switch position

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Tablet Specifications

Size	A2
Surface	**Model Number**
Standard	SD-210L
Active area	
(mm)	635 x 462
(inches)	25 x 18
Physical size	
(mm)	779 x 613
(inches)	30.7 x 24.1
Power consumption	13w
Weight	
(kg)	10.5
(lbs)	23.3
Command Sets	
WACOM II	✔
Bit Pad Two	✔
MM 1201	✔

Power supply	AC 100 - 240 V at 50/60 Hz
Input current	250mA max @ 100 - 240 Vac

General Specifications

	A2	
Resolution		
mm mode *	50 lpmm (1270lpi)	
inch mode *	1000 lpi (39.4 lpmm)	
Accuracy (over all with cursor)		
(mm)	± .25	
(inches)	.01	
Maximum reading height	Cursor	Stylus
(mm)	8	4
(inches)	0.3	0.2
Maximum report rate		
(points per second)	205	
Origin position	Arbitarily selectable within effective reading range	
Interface	RS-232C	
Operating temperature	5 - 40°C (41 – 104°F)	
Storage temperature	–10 - 60°C (14 – 140°F)	
Humidity	20% - 80% (noncondensing)	

* Switch 7 of DS1 sets to millimeter or inch mode.

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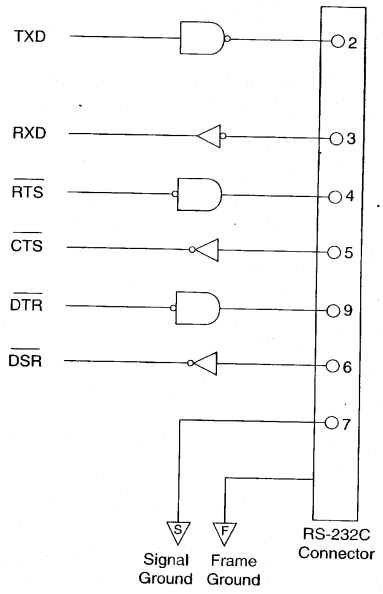
Pointing Device Specifications

Four-Button Cursor	Size (mm)		62 x 130 x 24
	(inches)		2.1 x 4.6 x 0.8
	Weight (grams)		45
	(ounces)		1.6
Pressure Stylus		SP-300	SP-310
Band color		Blue	Red
Switches		Pressure-sensing tip	Pressure-sensing tip
Pressure (grams)		0-500	0-300
Feel		Firm	Soft
Refills*		Duracon	Duracon
Tip stroke (mm)		1.2	1.2
Size (mm)		11 x 148	11 x 148
(inches)		.43 x 5.8	.43 x 5.8
Weight (grams)		11	11
Standard Stylus		SP-200	SP-210
Tip Travel		0.2 mm (nonstroke)	0.9 mm (stroke)
Band/Switch Color		Gray	Red
Switches		Tip and side	Tip and side
Refills*		Duracon or color (type 4C)	Duracon or color (type 4C)
Size (mm)		11 x 148	11 x 148
Weight (grams)		11	11
Slim Stylus		SP-200A	SP-210A
Tip Travel		0.2 mm (nonstroke)	0.9 mm (stroke)
Clip Color		Gray	Magenta
Switches		Tip and side	Tip and side
Refills*		Duracon	Duracon
Size (mm)		11 x 142.5	11 x 142.5
(inches)		.43 x 5.6	.43 x 5.6
Weight (grams)		8.4	8.4

* See "Maintenance" for purchase information

RS-232C Digitizer Circuit



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